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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/308,032	08/13/1999	BART DIERICKX	IMEC169.001A	5620

7590 09/24/2003

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EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 09/24/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/308,032

Applicant(s)

DIERICKX ET AL.

Examiner

Brian C Genco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 3,4,10 and 11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's amendment filed July 16, 2003 has overcome the 35 U.S.C. 112, second paragraph rejection of claim 7 as well as the 35 U.S.C. 103(a) rejection of claims 1-4 and 6-8.

Applicants remarks with regards to the preliminary amendment are moot in view of newly amended claim 3.

Applicant's arguments are moot in view of new grounds of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 3, 4, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 5,001,359 to Hashimoto et al) in view of (USPN 5,311,320 to Hashimoto).

In regards to claim 3 Hashimoto et al, herein '359, discloses an image sensor comprising an array of columns and rows of pixels(e.g., Fig. 4), all the pixels of one column of the array being connected to at least one common pixel output line(e.g., Fig. 4) having at least one memory element(e.g., elements Ct1 and Ct2 of Fig. 4) and at least one column amplifying element(e.g., element Q of Fig. 4), each common pixel output line being divided through two switches(e.g., Qb1 and Qb2) into at least two parallel circuits having said memory element, the two parallel circuits being connected through a switch(elements Qt1 and Qt2 of Fig. 4) with the same input of said column amplifying element.

Examiner notes that '359 discloses column amplifier element Q is a BJT transistor. Examiner further notes that one skilled in the art would recognize that using a BJT transistor for a buffer amplifier would enable lower power usage. However, one skilled in the art would also

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recognize that there are many CMOS buffer amplifier circuits wherein a CMOS buffer amplifier would be advantageous in reducing manufacturing costs. Official notice is taken. Therefore it would have been obvious to one skilled in the art at the time of the invention to have made the column buffer amplifier using a MOS process rather than as a BJT in order to reduce manufacturing costs.

'359 does not disclose nor preclude that all of the column amplifying elements are connected to a common output amplifier. '359 discloses supplying noise and signal plus noise signals to the outputs(column 8, lines 29-34) wherein Hashimoto, herein '320, discloses using a differential amplifier in order to take the difference between signal plus noise and noise signals (Fig. 3A; column 13, lines 9-16). Therefore it would have been obvious to one skilled in the art at the time of the invention to have added a differential amplifier to '359's invention in order to take the difference of the signal plus noise and noise signals. As such '359 in view of '320 discloses that there is a further switch(elements Qs1 and Qs2 of Fig. 4 of '359) between said column amplifying element and the common output amplifier.

In regards to claim 4 see Fig. 4 of '359.

In regards to claim 10 see Fig. 4 of '359.

In regards to claim 11 Examiner notes that '359's image sensor has at least two input terminals, wherein there is shown at least 2 exemplary columns wherein there is one input to the column amplifier for each column. Thus there is at least 2 inputs depicted in Fig. 4.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:00am to 4:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center 2600 customer service office whose telephone number is 703-306-0377.

Brian C Genco
Examiner
Art Unit 2615

August 28, 2003



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600